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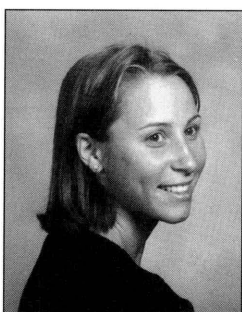
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POSTSECONDARY EDUCATION AND LABOR MARKETS IN AUSTRIA AND SWITZERLAND

Sacha Dumont



The university system appears to be a weak link in the innovation system, being characterized by low productivity and lack of integration with the business sector. Further reforms to both the university budget systems and the rules for academic promotion appear necessary in order to change incentive structures to encourage closer connection with the enterprise economy.

— OECD [1999], Austrian..., p. 15

International Overview

The lack of coordination between labor market forces and educational systems is a global concern. In fact, the mismatch felt in many countries between university graduates' fields of study and labor market demands prompted a thematic debate at the 1998 United Nations Educational, Scientific, and Cultural Organization's (UNESCO) World Conference on Higher Education. The debate, entitled "The Requirements of the World of Work," was led by the International Labor Organization (ILO).

In the past ten years there has been a shortage of full-time employment opportunities for university graduates, many of whom have had to settle for part-time jobs directly

after leaving school. In the 1990's substantial university graduate unemployment was reported in many relatively rich UNESCO member countries as well as in the developing member nations. It is important to remember, though, that university graduates still have an easier time finding employment than non-graduates. However, the fact remains that "employment has been less stable as compared to the situation which was the norm in most industrialized societies over the last few decades." (Teichler, p. 14) The substantial unemployment rates in some countries during the 1990's have raised concern that university graduates may have even more difficulty finding jobs in the future. (Teichler, p. 14)

The ILO found that gathering numerical

data that support such concerns was difficult because quantitative data cannot be collected from all graduate employment fields. Furthermore, it is hard to ascertain the types of work university graduates are doing and the extent to which the knowledge acquired in school is eventually used on the job. (Teichler, p. 17) It is also difficult to interpret employers' statements regarding qualifications because of the subjective nature of the questions asked.

The instability of the labor market is partially due to the changing demands of the labor market. Graduates are now expected to have a set of skills that are not taught in the traditional university curricula, whose goals are to foster general knowledge, flexibility, social skills, and personality. Globalization and technological advancement, however, have put pressure on the educational systems to also provide "specialized knowledge in new growth areas and interdisciplinary knowledge raising problem awareness and problem-solving abilities." (Teichler, p. 20)

The immediate concerns of UNESCO and the ILO are to deal with both the negative and positive aspects of globalization and to create alternative graduate employment opportunities other than in the public sector and traditional professions. (Teichler, p. 19) A disparity exists between skills demanded by the marketplace and those encouraged by the educational systems. Jobs in agriculture and the manufacturing industries, the public sector, and jobs requiring low levels of formal education and training are on the decline, while there has been an increase in jobs in the service industries, the private sector, and jobs requiring high-level knowledge (including computer literacy).

UNESCO and the ILO have given a number of recommendations on how to bridge the information and preparation gap between the world of work and higher education. These include:

- the involvement of practitioners in curriculum development,
- the participation of industry in the decision-making processes,
- increased mobility between academic and professional careers as well as part-time teaching by practitioners and internships prior to or during the course of study,

- the involvement of students in research projects sponsored by industry, and
- the provision of vocational counseling services for students and placement of graduates. (Teichler, p. 26)

The lack of coordination between labor market forces and education is no more evident than in Austria and Switzerland, which have similar educational systems. Both offer what is referred to as the "dual system" of vocational training. The dual system, introduced at the secondary education level, consists of company-based training of apprentices and is complemented by part-time attendance at vocational school. The dual system runs parallel to the traditional secondary educational track, which feeds into the universities.

Austria and Switzerland have been affected by changing labor market demands and are now adjusting their educational systems to better prepare their students for the world of work. Both countries are trying to lower their university graduate unemployment rates by following the previously mentioned UNESCO recommendations. This paper will discuss the current situation in both countries and will outline the specific reforms being made to each system. The majority of the reforms are being made to the dual system and the tertiary level of both educational systems, leaving the traditional secondary educational tracks relatively unchanged.

The Austrian System

Autonomy and Control of the Austrian Educational System

The Austrian Educational system is controlled mostly by the federal government, but the federal authorities of each province (*Laender*) implement the policies. According to Lorenz Fritz, the General Secretary of the Austrian Federation of Industries, "There is not a strong enough tie between the needs of the economy and education because the government does not have enough control. There is no central governing body and this lessens the opportunity for collective changes." (Fritz)

The Austrian Federal Ministry of Education and Cultural Affairs and the Federal Ministry of Labor and Social Affairs work

together closely. According to these authorities, the unemployment rate will decrease if the Austrian educational policies give participants the appropriate knowledge, skills, and qualifications. (Neulinger, p. 4)

In 1993 the National Council, Austria's federal legislative body, passed the Federal Act on the Organization of Universities, which gives university authorities more decision-making power and reduces the power of the Federal Ministry of Science and Research. (Feigl and Zechmeister, p. 25) The act enables individual schools to plan curricula that coincide with the interests and abilities of students. The act also allows for more decentralization in the school system, while maintaining the uniformity of the Austrian educational system in terms of educational opportunities, performance evaluation, and access to jobs. (Feigl and Zechmeister, p. 7)

Also, in 1993 upper secondary technical and vocational schools became more autonomous, with each school being given the ability to adjust its curricula. Different schools choose special points of emphasis during instruction in order to take advantage of regional economic requirements. (Moravec, p. 52)

Austrian Upper Secondary Educational System

Once Austrian students reach their ninth year of schooling, they choose one of five paths. Students who have completed lower secondary school can elect to continue on to the upper level of secondary academic school (the traditional track). Students who are unsure of which track to follow can attend a pre-vocational year of education. This year provides students with information and counseling on career opportunities and practical training. Other students may choose to follow the teacher training track. All secondary schools culminate with the *Reifeprüfung* exam; the exam allows entrance into all levels of tertiary education. (Moravec, p. 48)

There are two options for students who choose to pursue the vocational pathway without attending the pre-vocational year. About 50 percent of all students who continue their education choose to enter the dual system of apprenticeship training directly after lower sec-

ondary school. The dual system integrates company-based training with part-time schooling. Intermediate level secondary technical and vocational schools provide complete vocational training in a chosen line of work. Students who complete courses that are three years or longer qualify to exercise trades in that line. (Feigl and Zechmeister, p. 21) Advanced level secondary technical and vocational schools provide five-year vocational training and culminate with a school-leaving exam (*Matura*) that allows students to enter any form of tertiary education. Courses focus on such areas as engineering, business, fashion and clothing, social services, general services, tourism, agriculture and forestry. These schools attempt to develop personality, flexibility, and creativity as well as create an atmosphere for critical thinking, teamwork, enhanced communication skills and social consciousness. (Feigl and Zechmeister, p. 21) According to the 1998 UNESCO report, these are the skills considered to be "most relevant" in the world of work today.

Austrian Tertiary Educational Pathways

Upon completion of upper secondary schooling, students are confronted with several choices for their tertiary schooling. Students who complete the traditional secondary academic track and pass the *Reifeprüfung* exam can enter universities. Austria provides free university level education in its twelve universities and six colleges of arts and music. At the beginning of the 1996 school year there were over 200,000 students enrolled in the twelve universities and almost 7,000 enrolled in the six colleges. The minimum length of schooling for a degree is eight semesters.

Kolleges (not to be confused with colleges in the U.S. sense) are post-secondary courses that serve as an alternative to universities and give students practical and theoretical education. They are attended mostly by graduates of secondary academic schools who do not want to go to the university and need initial qualifications for vocational training. *Akademien* are post-secondary colleges that provide training for social work, teachers, and paramedical staff. (Feigl and Zechmeister, p. 23)

The 1993 Federal Act on Tertiary-level Vocational Colleges introduced the first tertiary level vocational institutions. Austria's admittance into the European Union prompted the introduction of vocational degree courses that last three years and allow graduates to pursue academic degrees after completion. The tertiary level vocational schools are open to all students, and apprentices are now given the opportunity to continue their education beyond upper secondary vocational school. (Feigl and Zechmeister, p. 26)

Reorganization and Reform of Austrian Higher Education

Johann Wimmer, the head of the Austrian Department for Secondary Academic Schools, sees the problem as one of having "too many arts students (mostly studying English and history) and too few technical students." (Wimmer) He also notes that more women are now choosing to go into the sciences, in large part due to the Green movement toward ecological studies. There are not enough jobs, however, for graduates in the sciences. Wimmer suggests using governmental pressure on students to help them choose technical areas of study, as opposed to theoretical areas, in order to promote the country's economy. Currently, there is little state interference in these matters. He also wants the government to put more resources into technical universities in order to attract more students. (Wimmer)

Several changes to the Austrian higher education system have been made over the past ten years: the passing of a new University Organization Act, the introduction of tertiary-level polytechnical schools, the internationalization of teaching and research, and a restructuring of the dual system. (Feigl and Zechmeister, p. 25) The following sections will describe these changes in detail.

University Reform

The Austrian university system has been labeled by the OECD as a weak link in the innovation system, due to low student productivity and a lack of university integration with the business sector. (OECD [1999], *Austrian...*,

p. 16) Reforms are being made to the budget system, along with new rules for academic promotion, in order to change the incentive structures to encourage a closer connection to an enterprise-oriented economy. (OECD [1999], *Austrian...*, p. 16)

The creation of a new entrance exam, the *Berufsreifeprüfung* exam, coincided with the introduction of *Fachhochschulen*, or polytechnical schools. The new exam allows transfer from the traditional universities into the polytechnical institutions. Prior to this reform policies were much stricter; transfer between academic and vocational pathways was very uncommon. (OECD [1998], *Austrian...*, p. 96)

The University Organization Act of 1997 was intended to increase the occupational relevance of tertiary curricula, linking them more closely to the needs of the labor market. (OECD [1999], *Austrian...*, p. 68) The act introduced business training into non-business oriented studies and updated the new *Fachhochschulen*. Another problem addressed by the University Organization Act was the number of years students were required to attend, a contributing factor to low university degree completion rates. Students may now take exams earlier, in hopes of earlier graduation. There is also an ongoing review of which studies can be moved from the academic universities into the polytechnical schools. (Moravec, p. 61)

Polytechnical Schools

Fachhochschulen are new Austrian educational institutions that were intended to provide high-quality professional and academic training for specific occupations, integrating the world of work with the Austrian higher education system. Parliament passed the act creating *Fachhochschulen* in May 1993, and the act came into effect in October of the same year. A board of regulators, drawn from academia and industry, is charged with approving courses. The length of schooling ranges between six and eight semesters. By the 1996 school year, more than 30 courses were offered to 4,000 students, focusing on the fields of technology, business, and tourism. Software engineering, international business studies, and electronics are examples of possible courses of study. The

University Organization Act of 1997 updated *Fachhochschulen* courses so that they were more in line with current labor market demands, and by the end of the year 2000 enrollment should increase to 10,000 students. (Moravec, p. 61)

Other Reforms

Internationalization

Internationalization of the Austrian educational system has become an important issue because of Austria's integration into the European Union (EU) on January 1, 1995. Two of the EU's governing bodies, the European Parliament and the European Council, declared 1996 to be the "year of lifelong learning." International economic integration is rapidly increasing, and educational systems must reflect this movement. The EU has taken the first steps to raise basic qualification standards, such as underlining the importance of free and equal access to training opportunities. The EU is also determining the long-term objectives of general education and vocational training within the Community and has subsequently sponsored many programs that will be discussed in the following paragraphs. (Neulinger, p. 4)

As a member of the European Union, Austria must now abide by the rules, regulations and objectives set forth by the EU member states. Along with this responsibility come funds that can be used to accomplish the objectives, such as the European Social Fund. These funds support such initiatives as ADAPT and EMPLOYMENT. The objective of ADAPT is to accelerate the adaptation of the workforce to industrial changes by supplying unemployed citizens with training and career counseling along with creating new employment opportunities. EMPLOYMENT was initiated to foster better practices in the field of human resources through innovation, transnational cooperation, and local partnerships. Austria can also benefit from such EU-sponsored programs as ERASMUS, the part of the European Commission's education action program that is focused on higher education. ERASMUS allows teachers and students to move freely between the fifteen EU countries and nine other participating nations in order to attend for-

eign institutions and share knowledge. (European Commission)

Austria has also been cooperating with its neighbors to the east. There are university partnership programs that foster the exchange of researchers and students between Austria and the central and eastern European countries. (Feigl and Zechmeister, p. 25) According to Moravec, Austria's location between east and west will encourage the building of even more joint education and research ventures in the future. (p. 68)

Foreign language instruction, with an emphasis on communication skills, became compulsory in the school-based apprenticeship training program in 1990. Due to Austria's membership in the European Union, many apprentices have been able to participate in international projects and exchange programs. These apprentices are qualified to work internationally because of the teamwork, critical thinking, and increased foreign language skills they have learned in the apprenticeship training program. (Neulinger, p. 123)

Changes to the Dual System

According to the 1999 OECD *Austrian Economic Survey*, Austria has experienced a declining unemployment rate. In 1998, youth unemployment (ages 15–18) was 7.7 percent lower than in 1997. Unemployment within the 19–29-year-old age group also declined four percent between 1997 and 1998. (p. 61) These numbers can be deceiving, however. The Austrian unemployment rate is low partially due to the high number of public jobs created by the government. Also, the Austrian government encouraged early retirement so that younger people could have more employment opportunities. Currently, Austria is trying to increase the number of private sector jobs in the economy. This initiative is supported by making the educational system more efficient, stimulating entrepreneurship, and spreading technical knowledge. (OECD [1998], *Austrian...*, p. 87) Currently 29 percent of the employable Austrian population is still without vocational qualifications. However, jobs are now depending more upon technical know-how and analytic skills. (Neulinger, p. 5) The

Austrian vocational system needs to recruit more participants and change its curricula to adapt to labor market needs by incorporating more technical skills into its programs.

The Austrian National Action Plan for employment (NAP) was enacted in 1998 to strengthen the connection between the Austrian dual system and the world of work. In 1997 the number of apprenticeship applicants exceeded the number of training places available by almost 10,000. In order to reduce the gap between apprenticeship applications and available apprenticeship positions, the Austrian government and social partners created an incentive package for employers. This package was included in the 1998 National Action Plan. Many efforts were made to lower the cost to participating employers. For example, firms were given a tax credit during the first year of an apprenticeship, and employers were not required to pay social security or health insurance for the first three years of the apprenticeship. Subsidies were also granted, and some firms received preferences from public procurement tenders. (OECD [1998], *Austrian...*, p. 95)

Additionally, in 1998 NAP provided for a "rescue network" which worked to place 4,000 youths without apprenticeships. NAP gave financial aid to institutions that were willing to offer a ten-month vocational course that would serve in lieu of an apprenticeship. (OECD [1999], *Austrian...*, p. 67)

NAP's focus has also been to encourage students and the unemployed to become more adaptable so that they can find jobs more easily and thereby reduce youth unemployment. It attempted to do so by making several changes to the dual system. (OECD [1999], *Austrian...*, p. 15)

The apprenticeship scheme needs to be widened both occupationally and by sector. Full-time vocational training needs updating to respond to the new demands of the economy. The new higher level vocational schools (*Fachhochschulen*) should not be restricted to niche training, while the university system needs to be made more competitive, in particular by liberalizing the system of tenure and by promoting links between the uni-

versities and industry. Greater competition needs to be promoted in the area of providing retraining facilities. (OECD [1998], *Austrian...*, p. 88)

The apprenticeship curricula are being adapted to the new demands of the labor market by expanding the variety of apprenticeship fields. Within the first year after the changes were made, the increase in applications for new training fields has been significant. According to the 1999 OECD *Austrian Economic Survey*, in 1998 twelve percent of newly-concluded apprenticeship contracts were in areas which have been newly established since September 1997. (p. 67)

The Swiss System

Switzerland's educational system is similar to that of Austria but more decentralized, with each of its 26 cantons deciding on the curriculum structure and content, length of studies, and official teaching language (French, Italian, German, or Romansch). This decentralization reflects the cultural differences among the cantons. However, according to the Swiss Embassy in Washington, D.C., "Schools remain an important part of the national and cultural identity of this multi-lingual and pluri-cultural country." This section will describe Swiss education in detail, followed by a discussion of the country's recent reforms to the system.

Swiss Upper Secondary Educational System

Swiss students have several options for upper secondary schooling. Seventy-five percent of students choose the dual system of vocational training, 15 percent attend traditional academic schools that culminate with a university entrance exam, 5 percent attend other general education schools or teacher training, and 5 percent do not continue their education. (Wettstein, p. 17) After completing compulsory education, seven out of ten teenagers choose the vocational training path. This results in a very strong work force of skilled craftsmen in Switzerland. (Ursprung, p. 313) However, over the past few decades there has been a trend away from vocational training toward more general education at the secondary level. (Wettstein, p. 25) This could be a result of the

increased prestige associated with a university degree, or it could be due to students postponing their career decisions until after upper secondary school.

The Swiss secondary vocational system offers three pathways. The dual system is similar to that in Austria. It couples on-the-job training with attendance at a vocational school for one or two days per week. The sponsoring firms teach the students practical skills, and employer associations largely determine the content of the apprenticeship programs. The vocational school supplements practical learning with instruction in both theory and general culture. This interaction between employer associations and apprenticeship programs provides a strong tie between the requirements of the labor market and the content of the programs. (OECD [1997], *Swiss...*, p. 97) The so-called triad system is similar to the dual system, except that it begins with compulsory "introductory courses" that teach basic skills required for the apprenticeship. (Wettstein, p. 35) Students can also opt to attend full-time vocational schools. These schools are more popular in the cantons that are influenced by France and Italy because traditions in those countries promote more in-class schooling. On-the-job training is more of a German tradition. (Wettstein, p. 20) Currently, the vocational system offers more than 400 areas of training ranging from industry to trade to banking to agriculture.

Tertiary Level of the Swiss Educational System

The tertiary level of education consists of both university and non-university institutions. There are two federal institutes of technology and eight cantonal universities. Switzerland has one of the lowest percentages of university graduates among all OECD countries at about seven percent of the population. However, Swiss universities are said to be of high standard by international norms. (Ursprung, p. 313) The non-university sector consists of three- or four-year advanced vocational training schools and two-year technical colleges. Twenty percent of students who graduate from the dual system of vocational training go on to advanced vocational schools. (OECD [1997], *Swiss...*, p. 88)

Reorganization and Reform of Swiss Higher Education

University Reforms

Several recent reforms have been made to the Swiss academic university program. For example, limits are being put on the number of years of study between nursery school and the doctorate level. In comparison to international norms, Swiss graduates begin their professional careers far too late in life. The aim of this reform is to have students complete their general education by the age of 18 (instead of 20), and the length of undergraduate studies will not exceed five years. Late graduation has placed Swiss graduates at an international disadvantage when compared to the British and Japanese. Faculties have been resistant to these reforms, however, because they dislike the idea of lightening the curricula. (Ursprung, p. 314)

To better prepare university students for their careers, the Swiss educational system is changing course content and structure to include more interdisciplinary instruction. Teaching problem-solving skills has become one of the major objectives of the whole educational process. (Ursprung, p. 315)

Despite Switzerland's excellent education system, it has not produced its share of high-tech innovators and entrepreneurs¹. One initiative addressing this issue is the International Institute for Management Development (IMD), a privately funded Swiss business graduate school that offers two MBA programs. According to the Director of the IMD, Peter Lorange, the lack of entrepreneurship is partially caused by the fact that "education is too conventional. There is too much of a silo mentality." He emphasizes the need to diversify the education of students. They should learn through "an eclectic education package with many cross-functional projects." (Lorange)

Georges Haour, a professor at IMD, agrees. According to Haour, "The Swiss innovation system depends on the culture of the education system. If the system fosters a silo mentality then there will be no working in cross-functional

¹See the article by Troy Danka, "Entrepreneurship in Switzerland: Opportunities and Challenges," in this issue of *Perspectives*.

teams and, therefore, not enough innovation.” (Haour) Institutions like IMD attempt to change this learning atmosphere by encouraging students to apply innovative models and push beyond traditional thought. Lorange believes that “Swiss universities are bad. Some of the worst organizations are universities because of tenure departments and titles.” (Lorange) IMD employs a small faculty with no tenure; each staff person “lives and dies by the sword.” Departments do not exist at IMD; projects and programs are run by the most capable people for the job. (Haour)

Jane Royston, the Chair of Entrepreneurship and Innovation at the Ecole Polytechnique Federal de Lausanne (EPFL), believes that “the future of Switzerland is tied up in high tech innovation. Swiss students have great ideas, but they do not want to do the business end of it.” (Royston) Martin Vetterli, an EPFL professor and entrepreneur, agrees. “Swiss students have a good background in technology and ideas, but not in the business of the ideas.” (Vetterli)

Maturité Professionnelle (MP) and Hautes Écoles Spécialisées (HES)

In 1995 a new pathway called the *Maturité Professionnelle* (MP) was created to provide students in the dual system with a level of education equivalent to that of university studies. This reform was in response to the growing labor market demand for well-educated and highly skilled workers and to deter the recent movement away from vocational schooling. The MP pathway emphasizes general education, which is intended to make graduates more flexible and adaptable to labor market demands. (OECD [1997], *Swiss...*, p. 91)

Once a graduate passes an MP exam, he can enter his relevant profession or continue with his education by attending colleges of higher education called *Hautes Écoles Spécialisées* (HES). In 1995 the Swiss government created HES as a combination of practical and theoretical education within a three- or four-year degree program. Courses from advanced technical, commercial, and arts-oriented colleges were regrouped and upgraded to form the HES curricula — similar to those of

the university but without a research component. These institutions foster a strong bond between the educational system and the job market by consulting with professional associations about relevant curricula. A mixture of part-time and full-time teachers enhances the flow of information from enterprises into course content. The part-time teachers can bring current job experience to the classroom. The first HES degrees will be distributed in the year 2000. (OECD [1997], *Swiss...*, p. 91)

Other Reforms

Changes to apprenticeship program content are under way, but the process is slow. Authorities agree that presently there is too much specialization in apprenticeships and that too many of them are available in non-critical fields, such as agriculture. For example, the Swiss service sector is growing, but the number of apprenticeships available in that sector are not increasing at a comparable rate. (OECD [1997], *Swiss...*, p. 99)

The strength of Swiss vocational schools depends on the high quality of the available apprenticeships. The Swiss government also believes that research undertaken by students and faculty will help vocational schools compete with comparable foreign institutes and will help students to more easily find employment abroad. (Ursprung, p. 315) Reforms are under way which give teaching faculty time off to engage in research and which also increase the level of basic and applied research performed by students in school.

The Swiss government has also made reforms that allow university faculty and staff more autonomy in deciding how to select and provide appropriate course content within current budget constraints. However, part of the reform requires universities to continually survey employer satisfaction. The OECD believes that the Swiss educational system is at a disadvantage because of its small private university sector. According to the 1997 OECD *Swiss Economic Survey*, competition from private universities is the most effective way to make public universities put pressure on each other to introduce more relevant programs. Currently, there are such high subsidies for pub-

lic universities that the private universities may never be able to draw enough students and therefore may never provide a threat to the public universities. (OECD [1997], *Swiss...*, p. 99) In an attempt to help the private university sector grow, the Swiss government is lowering the amount of subsidies it gives to public universities by only giving a proportional amount of money based on the number of diplomas given by universities, instead of the number of enrolled students. (OECD [1997], *Swiss...*, p. 118)

Switzerland has a unique problem of regional employment disparity between its German and non-German speaking regions. According to the 1997 OECD *Swiss Economic Survey*, youth unemployment rates are 2.3 times the adult rates in French-speaking cantons, compared with only 1.7 times adult rates in German-speaking regions. This is partially caused by the greater role of the dual system in German-speaking cantons in combination with greater interaction between students and the labor market in the dual system and general education. German-speaking university graduates are considered to be more flexible with their acceptance of entry-level jobs and they are less demanding about their starting salaries. (OECD [1997], *Swiss...*, p. 102) Increasing the autonomy of university faculty could allow the universities to better address this issue by allowing faculty to make changes to curricula depending on the school's region.

Conclusion

There are some interesting similarities and differences in the educational systems of Austria and Switzerland. Switzerland's educational system is decentralized, whereas Austria is striving to achieve decentralization through its recent reforms. Both countries believe that a decentralized educational system will allow the schools to better cater to regional requirements and the interests and abilities of students, and also to capitalize on opportunities offered by specific locations. Swiss educational decentralization has encouraged a system which is working slowly to develop with the social and economic conditions. However, before this can be achieved, there needs to be a considerable amount of coordination between

different levels of government. ("Swiss Culture and Education")

Recently both countries have reformed their respective educational systems in order to better meet the needs of the labor market. One common reform was the introduction of technical schools at the tertiary level of education. Austria instituted *Fachhochschulen* in 1993, and Switzerland implemented *Hautes Écoles Spécialisées* (HES) in 1995.

Attempts at reform in both countries have encountered similar problems, however. Reform processes have taken considerable time. Switzerland's reforms have taken an extraordinary amount of time to institute because, with its 26 unique cantonal educational systems, there is a lack of coordination among the various levels of education. The cantons find it difficult to agree on one path of action. (Ursprung, p. 315)

One very important difference between Austria and Switzerland that affects their educational systems is Austria's European Union membership and Switzerland's non-membership. Austria's educational system, students, and labor market can benefit from its EU membership as long as current political differences can be resolved. (Currently the EU is unhappy with the chosen Austrian leadership, and this could conceivably result in Austria's removal from the EU.) Austria benefits from its involvement in all of the EU's student, information, research, and labor exchange programs.

Even though Switzerland is not a member of the EU, the Swiss government wants to contribute to the competitiveness of the European economy by achieving full membership in the Research and Educational Framework Programs of the EU. Inclusion would allow Switzerland to increase the mobility of its youth among European countries without becoming an official EU member. (Ursprung, p. 317) However, because of a lack of coordination among cantons, students earn degrees that cannot be mutually recognized by EU countries and are therefore not compatible in the European context. This has created a need for speedier procedures to set up joint agreements between cantons. (Ursprung, p. 314) The Swiss government has given substantial funds to support such EU research and development initiatives as EUREKA, COST, LEONARDO DA VINCI and

ERASMUS. These initiatives are designed to bring industry closer to education. (Ursprung, p. 318) EUREKA is a transnational collaboration between academia and industry, and COST is a collaboration of European scientists. LEONARDO DA VINCI is a transnational partnership that promotes, updates, and improves vocational systems, specifically focused to repair the mismatch between the skills of the graduates and demands of the labor market.

Austria has experienced overwhelming demand for a limited number of apprenticeships. In response, reforms such as the NAP have been made to increase apprenticeship

breadth and availability. On the other hand, Switzerland is trying to cut back on the specialization and number of apprenticeships in order to focus on more general education. (OECD [1997], *Swiss...*, p. 99)

Within the first few decades of the twenty-first century, both Austria and Switzerland must focus their efforts in coordinating labor market needs with academic, technical, and vocational programs. Youth unemployment is certain to decrease in both countries if the current reforms remain in place and if new efforts to align the educational systems with labor market demands continue.

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